



- EAST**
- L1: (416217) additive
  - L2: (176090) stabilizer
  - L3: (55010) stabiliser
  - L4: (297463) stabilizing
  - L5: (52406) stabilising
  - L6: (292809) inhibitor
  - L7: (386560) inhibiting
  - L8: (2043137) compound
  - L9: (336109) polyurethane
  - L10: (473161) foam
  - L11: (457188) enhancer or enhancing
  - L12: (11544) hydroxypropyl adj methacrylate
  - L13: (21358) hydroxyethyl adj acrylate
  - L14: (373) benzyl adj cinnamate
  - L15: (1336265) 11 or 12 or 13 or 14 or 15 or 16 or
  - L16: (207) 114 and 115
  - L17: (17) 114 same 115
  - L18: (7) 19 and 110 and 117
  - L19: (41) 19 and 110 and 114
  - L20: (107) 19 and 114
  - L21: (1248) 19 and 110 and 113
  - L22: (761) 113 same 115
  - L23: (46) 19 and 110 and 122
  - L24: (28720) hydroxyethyl adj2 acrylate
  - L25: (904) 124 same 115
  - L26: (48) 19 and 110 and 125**
  - L27: (0) 126 not 124
  - L28: (2) 126 not 123

negative prepolymer was prepared in an amount of about 0.5 to 2 parts by weight of pentaerythritol triacrylate to the MDI on the A side and added to the A side both as separate prepolymers and a direct addition to the A side. The results obtained are the same as with the use of allyl alcohol propoxylate-urethane and its prepolymer. The pentaerythritol triacrylate is a commercial product, Sartomer (SR 444), a product of Sartomer Company of Exton, Pa.

#### (15) EXAMPLE 6

(16) Examples 2, 3 and 4 were repeated both using as the organic additive compound the hydroxy polyester acrylate (TONE Monomer M-100, a product of Union Carbide Chemicals and Plastics Company Inc.). The organic additive was added to the A side and as an in situ prepared oligomer and as a prepolymer. The TONE M-100 comprises a hydroxy polyester acrylate (approximately 90%), up to 10% hydroxyethyl acrylate, up to 1% E-caprolactone and up to 1% ethylene glycol-diacylate. The hydroxy polyester acrylate was prepared by the polymerization of a caprolactone with an acrylic compound. The results were the same or similar to the employment of the other organic additives and the prepolymers prepared therefrom in that the bond between the cured polyester layers and the rigid polyurethane foam layer was excellent.

(17) Thus, foamable polyurethane compositions may be prepared for the preparation of rigid foam polyurethane for use in preparing products with polyester resin layers. The polyurethane composition contains an organic additive or additive-oligomer having a hydroxyl group and at least one ethylenic unsaturated group, for example, a hydroxy-containing acrylate monomer. The use of the organic additive containing hydroxyl group and ethylenic unsaturated groups, typically an acrylic group, and more particularly, a hydroxy-containing acrylate or allyl-type monomer, can be added to a diisocyanate to prepare a urethane prepolymer or oligomer or isocyanate prepolymers or urethane prepolymers, and then either the organic additive or the prepolymer or oligomer then prepared is added to the polyurethane prior to

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	U	I	Document ID	Issue Date	Pages	Title	Current OR	Current XREF	Retrieval C	Inventor	S	C	P	2	3
24	<input checked="" type="checkbox"/>	<input type="checkbox"/>	US 7087306 B2	20060808	11	Composite article	428/424.4	428/187; 428/424.2		Peeler; Calvin T. et al.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25	<input checked="" type="checkbox"/>	<input type="checkbox"/>	US 6924076 B2	20050802	86	Developing assembly, process cartridge and image-forming	430/124	399/284; 399/286;		Saiki; Kazunori et al.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26	<input checked="" type="checkbox"/>	<input type="checkbox"/>	US 6531010 B2	20030311	15	Thermoplastic resin and fiberglass fabric composite	156/88	156/201; 156/203;		Puppin; Giuseppe	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27	<input type="checkbox"/>	<input type="checkbox"/>	US 6451430 B1	20020917	7	Polyurethane, foam-polyester composite structure and	428/423.7	156/307.1; 156/307.3;		Smith; Stuart B.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28	<input checked="" type="checkbox"/>	<input type="checkbox"/>	US 6353068 B1	20020305	7	Polyacrylates and their use as degassing agents for	526/319	524/425; 524/437;		Dietz; Thomas et al.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29	<input checked="" type="checkbox"/>	<input type="checkbox"/>	US 6346160 B1	20020212	13	Thermoplastic resin and fiberglass fabric composite	156/88	156/201; 156/203;		Puppin; Giuseppe	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30	<input checked="" type="checkbox"/>	<input type="checkbox"/>	US 6251999 B1	20010626		Tin carboxylate catalysts for epoxy-acid coating	525/195	502/170; 525/176;		Rardon; Daniel E. et al.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31	<input type="checkbox"/>	<input type="checkbox"/>	US 6114402 A	20000905	6	Modified rigid, foamable urethane composition and	521/117	252/182.2; 252/182.22;		Smith; Stuart B.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32	<input checked="" type="checkbox"/>	<input type="checkbox"/>	US 6001922 A	19991214	19	Small particle size polyester/acrylic hybrid	524/513	524/457; 524/502;		Clark; Mark Dwight et	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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